

Notice of Allowability

Application No.

10/005,824

Examiner

Aaron M Richer

Applicant(s)

MOJAVER ET AL.

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 6 August 2004.
2. ☒ The allowed claim(s) is/are 1-12, 17, 18 and 24.
3. ☒ The drawings filed on 26 April 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Allowable Subject Matter

1. Claims 1-12, 17-18, and 24 are allowed.
2. As to claim 1, Zimmerman (U.S. Patent RE36,207) discloses a device for providing a perspective corrected view of at least a portion of a wide angle image, comprising:

an image-capturing device having a fish-eye lens for generating the wide angle image as a projection of at least a section of a viewing hemisphere associated with the lens onto an image plane (col. 3, lines 60-64; col. 3, lines 29-36).

Manelphe (U.S. Patent 5,077,609) discloses a first display module for displaying the wide angle image, and a second display module for displaying a perspective-corrected view of a portion of the image (col. 2, lines 9-20).

Manelphe further discloses a processor further comprising a correlation module for displaying a graphical object on the displayed wide angle image that identifies the selected portion of the image displayed in the perspective corrected view (col. 3, lines 15-29; Figure 2, elements 16-20).

Neither Zimmerman nor Manelphe discloses a device wherein the processor generates said perspective-corrected view *from a vantage point offset relative to a center of said viewing hemisphere*.

3. As to claim 17, Zimmerman discloses a device for providing a perspective-corrected view of at least a portion of a wide angle image, comprising:

an image-capturing device having a fish-eye lens for generating the wide angle image (col. 3, lines 60-64; col. 3, lines 29-36), and

a processor in communication with the image-capturing device (col. 3, lines 29-36),

the processor correcting at least a portion of the image for distortions introduced by the fish-eye lens by mapping a point (u,v) on an undistorted image plane corresponding to a perspective-corrected view of the image portion to a point (x,y) on a distorted image plane corresponding to the image

Zimmerman does not disclose a device that corrects perspective in accord with an angle *for viewing a section of the hemisphere corresponding to the image portion from a vantage point offset from a center of the hemisphere and a distance between the vantage point and the center of the hemisphere.*

4. As to claim 24, Equations 17 and 18 in col. 7 of Zimmerman show a method of correcting a portion of a fish-eye image by mapping an object point (u,v) that represents where the image is actually located to an image point (x,y) (equations 2, 3, and 4 in col. 5 and col. 6). However, Zimmerman does not disclose the specific equations contained in claim 24, nor are the equations in claim 24 obvious variants of the equations contained in Zimmerman.

5. The following is an examiner's statement of reasons for allowance:

As to claim 1, the prior art does not anticipate the limitation of "wherein the processor generates said perspective-corrected view from a vantage point offset relative to a center of said viewing hemisphere" with the other limitations of claim 1.

As to claim 17, the prior art does not anticipate the limitation of "the processor correcting at least a portion of the image for distortions introduced by

the fish-eye lens by mapping a point (u,v) on an undistorted image plane corresponding to a perspective-corrected view of the image portion to a point (x,y) on a distorted image plane corresponding to the image in accord with an angle for viewing a section of the hemisphere corresponding to the image portion from a vantage point offset from a center of the hemisphere and a distance between the vantage point and the center of the hemisphere.” with the other limitations of claim 17.

As to claim 24, the prior art does not anticipate the limitation of the use of all of the equations listed in claim 24 together for perspective correction with the other limitations of claim 24.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

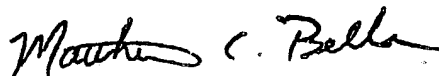
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M Richer whose telephone number is (703) 305-5825. The examiner can normally be reached on weekdays from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Matthew Bella can be reached on (703) 308-6829. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMR
8/30/04

A handwritten signature in black ink, appearing to read "Matthew C. Bella".

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600